II. REMARKS

1. Claims 1-15 and 17-26 remain in the application.

2. Applicants respectfully submit that claims 1, 2, 9-10, 13-15 and 19-21 are not anticipated by Hui et al. (US 4,660,170, hereinafter "Hui") under 35 USC 102(e). It is noted that claim 17 is addressed as being anticipated by Hui but is not listed in the introductory paragraph of the rejection with claims 1, 2, 9-10, 13-15 and 19-21. However, in an effort to expedite prosecution, claim 17 is addressed in Applicant's arguments.

2.1 Hui fails to disclose or suggest that the coupling unit comprises a first signal path that is adapted to provide a signal connection between at least one terminal of the first unit to be tested and at least one terminal of the second unit to be tested as recited in Applicant's claim 1.

The Examiner refers to Figure 3 and column 1, lines 5-15 as disclosing this feature. However, all that column 1, lines 5-15 disclose is a field programmable system used to provide data for altering or modifying program information stored in the memory of a programmed processor and nothing more. There is no disclosure in Column 1, lines 5-15 nor anywhere else in Hui of a "coupling unit comprising a first signal path that is adapted to provide a signal connection between at least one terminal of the first unit to be tested and at least one terminal of the second unit to be tested" as recited in Applicant's claim 1.

Hui merely discloses a system for providing information to alter the software of an electronic data processor embedded in an electronic module where the system includes a remote programming module that conducts a sequence of operations to provide data to the processor which the processor uses to reprogram itself (Abstract). As can be seen in Figure 3 of Hui, the system includes a guidance system (20) having guidance

processors (32-36) linked together by a data-bus (37). Each of the processors (23-36) have associated programmable memory circuitry, into which reprogramming data can be entered by conventional write operations. (Col. 4, L. 35-42). A bi-directional signal path (29) connects the guidance system (20) to the reprogramming data module (26) (Fig. 3) where the reprogramming data module is used to reprogram the guidance system (20). Neither the guidance system (20) nor the reprogramming data module (26) are disclosed in Hui as being a "unit to be tested". Thus, the signal path (29) of Hui cannot reasonably be considered as a "coupling unit comprising a first signal path that is adapted to provide a signal connection between at least one terminal of the first unit to be tested and at least one terminal of the second unit to be tested" as recited in Applicant's claim 1. Thus, claim 1 is patentable at least for this reason.

2.2 Further, Hui fails to disclose or suggest that the first signal path comprises a signal conditioning facility adapted for receiving a first signal from the first unit to be tested, for conditioning said first signal in accordance with predefined parameters, and for providing the conditioned first signal to the second unit to be tested as recited in Applicant's claim 1.

It is noted that column 6, lines 30-65 referred to by the Examiner in making the rejection is not in any way related to "the first signal path comprising a signal conditioning facility adapted for receiving a first signal from the first unit to be tested, for conditioning said first signal in accordance with predefined parameters, and for providing the conditioned first signal to the second unit to be tested" as recited in claim 1. Column 6, lines 30-65 merely describes the reprogramming sequence taken by the guidance system processor (32-36) with respect to whether the reprogramming data module (26) is installed in the gripstock (12) of the missile system.

Figure 3, reference number (42) is referred to as anticipating this feature of Applicant's claim. However, the switch (42) in Hui is not the same as the "signal conditioning facility" recited by Applicant. In Hui, the guidance system (20) includes the switch (42),

which connects to a switch (57) of the reprogramming data module (26) through the bi-directional signal path (29). The switch (42) is connected to a conventional universal asynchronous receive/transmit device (UART) (40) which converts serial data transmitted over the bi-directional signal path (29) into the parallel data which is transferred to the respective microprocessors (32-36) in order to program their associated programmable memory circuitry (Col. 5, L. 22-53).

Likewise, the switch (57) in the reprogramming data module (26) is not the same as the "signal conditioning facility" recited in Applicant's claim 1. In Hui the switch (57) is connected to UART (59) which is located between the reprogramming controller (63) and the switch (57). The UART (59) serializes commands from the reprogramming controller (63) before transmitting those commands through the bi-directional signal path (29). (Col. 5, L. 63 – Col. 6, L. 8).

There is absolutely no disclosure whatsoever in Hui of either switch (42) or switch (57) "receiving a first signal from the first unit to be tested, for conditioning said first signal in accordance with predefined parameters, and for providing the conditioned first signal to the second unit to be tested" as recited in Applicant's claim 1. The switches (42, 57) are simply not suitable for conditioning a signal in accordance with predefined parameters. Thus, claim 1 is patentable for this additional reason.

2.3 In addition, Hui fails to disclose or suggest first switching facilities adapted for switching the signal path so as to select a signal of said first signal path or said second signal path as recited in Applicant's claim 1.

Reference number (38) in Figure 3 of Hui is cited in rejecting this element of Applicant's claim 1. As described in Hui, switch (38) is a hand operated switch that is depressed by the operator of the missile system. The depression of the switch (38) merely opens the line (29a) and prevents the input function signal (Fi) from being returned to the guidance system (20). (Col. 5, L. 2-6). Thus, switch (38) is nothing more than a hand operated switch for interrupting one of the two signal paths (29a, 29b). Nowhere is it disclosed in

Hui that the switch (38) is "adapted for switching the signal path so as to select a signal of said first signal path or said second signal path" as recited in Applicant's claim 1. Thus, claim 1 is not anticipated for this reason.

2.4 In order to establish a *prima facie* case of anticipation under 35 U.S.C. §102(b), each and every element of Applicant's claims must be found in the reference. As described above Hui does not disclose or suggest that the coupling unit comprises a first signal path that is adapted to provide a signal connection between at least one terminal of the first unit to be tested and at least one terminal of the second unit to be tested; that the first signal path comprises a signal conditioning facility adapted for receiving a first signal from the first unit to be tested, for conditioning said first signal in accordance with predefined parameters, and for providing the conditioned first signal to the second unit to be tested; and first switching facilities adapted for switching the signal path so as to select a signal of said first signal path or said second signal path as recited in Applicant's claim 1. Therefore claim 1 is not anticipated.

Claims 17 and 21 are not anticipated by Hui for reasons that are substantially similar to those described above with respect to claim 1. Claims 2, 9-10, 13-15 and 19-20 are patentable at least by reason of their respective dependencies.

3. Applicants respectfully submit that claims 1-8, 11-12, 17-18 and 21-26 are patentable over the combination of Muris et al. (US 5,781,559, hereinafter "Muris") and Hui under 35 USC 103(a).

The combination of Muris and Hui fails to disclose or suggest a coupling unit comprising a first signal path that is adapted to provide a signal connection between at least one terminal of a first unit to be tested and at least one terminal of a second unit to be tested; with said first signal path comprising a signal conditioning facility adapted for receiving a first signal from the first unit to be tested, for conditioning said first signal in accordance with predefined parameters, and for providing the conditioned first signal to the second unit to be tested; said coupling unit further comprising a second signal path

that is adapted to provide a signal connection between the at least one terminal of the second unit to be tested and the at least one terminal of the first unit to be tested; and first switching facilities adapted for switching the signal path so as to select a signal of said first signal path or said second signal path as recited in Applicant's claim 1.

Claim 1 is directed to an embodiment exemplified by Figure 8 of the present application. As described on page 26, line 23 through page 29, line 8, parameterized loop back testing is applied to bi-directional interfaces. As such, a coupling unit (800) provides a first signal path (832) for signal connection from a first unit to a second unit. The first signal path comprises a signal conditioning facility adapted for receiving a first signal from the first unit to be tested, for conditioning said first signal in accordance with predefined parameters, and for providing the conditioned first signal to the second unit to be tested;

The coupling unit further comprises a second signal path that is adapted to provide a signal connection between the at least one terminal of the second unit to be tested and the at least one terminal of the first unit to be tested. The coupling unit also includes switching facilities adapted for switching the signal path so as to select a signal of said first signal path or said second signal path.

In contrast, Muris, as shown in Figure 2 and as described in column 3, line 66 through column 4, line 34, is directed to providing a "testable circuit" that includes signal paths (20, 21, 22) with two test circuits "I" and "II" on either side of signal path (21). Test circuit "I" includes a test control circuit (10) driving a shift register (25) and a switching unit (23). Column 4, lines 51-55 describe how the test control unit (10) controls switching unit (23) so that it applies a test signal from storage element (25) to input (21a) of signal path (21). Test circuit "II" includes a test control circuit (12), a storage device (26), and a detector (28). Column 4, line 60 through column 5, line 10 describes how the output of signal path (21) is detected and stored in storage element (26) for

inspection. Applicants find no disclosure related to a coupling unit adapted to be coupled between a first and second unit to be tested.

The Examiner is again equating circuit "I" with a first unit to be tested and circuit "II" with the second unit to be tested. Applicants content that contrary to the Examiner's statements, circuit "I" is not being tested but instead applies a test signal to signal path (21) and circuit "II" is also not being tested but instead records the response of signal path (21).

Assuming only for arguments sake that circuits "I" and "II" are first and second units to be tested, there is still no coupling unit which is adapted to be coupled between such first and second units to be tested. There is nothing in Muris related to a coupling unit that provides two different signal paths with different signal flow directions between the respective units to be tested, as required by the claim language of claim 1.

The Examiner is again equating the "second signal path" of Applicants' claim 1 to the "second signal path" of Muris' claim 1. Applicants wish to point out again that the "first and second signal path" mentioned in the first line of column 8 of claim 1 of Muris clearly refers to signal paths (20, 21) of Figure 2, and that there is no disclosure anywhere in Muris that signal path (21) provides a signal connection between at least one terminal of the second unit to be tested and at least one terminal of the first unit to be tested.

Applicants also note that the Examiner is again equating the switching facilities of Applicants' claim 1 with switch (23) of Muris. The switching facilities in Applicants' claim 1 are arranged to switch between the oppositely directed first and second signal paths of the coupling unit. This is clearly not the case in Muris because the switch (23) shown therein switches between the output of shift register (25) on the one hand and the output of signal path (20) on the other hand.

Combining Hui with Muris fails to remedy the above-noted deficiencies of Muris. As described above Hui does not disclose or suggest that the coupling unit comprises a first signal path that is adapted to provide a signal connection between at least one terminal of the first unit to be tested and at least one terminal of the second unit to be tested; that the first signal path comprises a signal conditioning facility adapted for receiving a first signal from the first unit to be tested, for conditioning said first signal in accordance with predefined parameters, and for providing the conditioned first signal to the second unit to be tested; and first switching facilities adapted for switching the signal path so as to select a signal of said first signal path or said second signal path as recited in Applicant's claim 1.

Thus, because neither Muris nor Hui disclose or suggest that the coupling unit comprises a first signal path that is adapted to provide a signal connection between at least one terminal of the first unit to be tested and at least one terminal of the second unit to be tested; that the first signal path comprises a signal conditioning facility adapted for receiving a first signal from the first unit to be tested, for conditioning said first signal in accordance with predefined parameters, and for providing the conditioned first signal to the second unit to be tested; and first switching facilities adapted for switching the signal path so as to select a signal of said first signal path or said second signal path as recited in Applicant's claim 1, their combination cannot as well.

Claims 17 and 21 are patentable over the combination of Muris and Hui for reasons that are substantially similar to those described above with respect to claim 1. Claims 2-8, 11-12, 18 and 22-26 are patentable over the combination of Muris and Hui at least by reason of their respective dependencies.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and

allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,

25 October 2007

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